sor of government at Indiana University and a committee witness, who observed that the nation was looking too much to the White House for leadership on too many issues. "The country is too big, the issues are too complex, to make this a realistic attitude," Caldwell said. "And we do not have yet, even in the President, a superman."

Senator Edmund Muskie of Maine, chairman of the Senate Air and Water Pollution Subcommittee, takes a more positive view of the President's new council—provided it is supported by adequate staff work. He has introduced a bill, cosponsored by some 40 senators, which would set up an Office of Environmental Quality in the executive office of the President. The director of this new office could be the President's science adviser, or someone else, whom the President chooses.

Senator Jackson, Muskie's rival claimant in the Senate for the title of Mr. Environment, has developed a proposal which, while not directly in conflict with the Muskie bill, takes a different approach. It would establish in the Office of the President a three-member council on environmental quality, a body which would be analogous to the council of economic advisers. In Jackson's concept, this would be a body of three wise men to whom the President and his interagency council could look for "independent and impartial" advice.

The Jackson bill, which former Secretary of the Interior Udall supports, also spells out a national policy encouraging a "productive and enjoyable harmony between man and his environment"; more than that, it would require that proposals for federal projects be examined from the standpoint of their impact on the environment. The agencies concerned would have to certify, among other things, that any adverse environmental effects which cannot be avoided are "justified by stated considerations of national policy." According to an aide, Senator Jackson expects his measure to receive favorable Senate action this year.

In the House, Representative John Dingell of Detroit, chairman of the wildlife subcommittee of the Merchant Marine and Fisheries Committee, is sponsoring a bill similar to Jackson's, and he, too, will press for floor action this year. A staff man says that, thus far, it appears that the bill has no opposition, though there are other congressmen pursuing ideas of their own.

Perennially, there are proposals to revamp the bureaucracy. This year,

Academy Changes Army Gas Dump Plan

A National Academy of Sciences panel last week urged the U.S. Army to modify its plans to ship surplus chemical weapons across country by rail and then dump them into the Atlantic Ocean. Citing the possibility of a "catastrophic" accident, the panel recommended that the Army deactivate as many of the weapons as possible at their present storage points and dump only those weapons for which no other disposal method is feasible. The Army promptly announced that it would carry out some of the Academy group's recommendations and would study the others.

The Army had originally intended to ship some 27,000 tons of chemical weapons from as far away as Denver, Colo., to the Naval Ammunition Depot at Earle, N.J., where they were to be loaded on four old Liberty ships, towed at least 145 miles out to sea, and then sunk with the ships in at least 7200 feet of water. But critics in Congress charged that a railroad accident might spew lethal chemicals over the countryside and that the chemicals might cause serious ecological damage to the ocean (*Science*, 20 June 1969, p. 1376).

The Academy panel, which was headed by George B. Kistiakowsky,* Harvard chemist and science adviser to the late President Eisenhower, generally agreed with the critics. It recommended that two of the five chemical materials involved be deactivated and that the other three be dumped in the ocean only as a last resort. Although the Army had previously argued that deactivation was time-consuming, costly, and dangerous, the panel said the government should minimize risks to humans and the environment "even though this may complicate and make more costly its own operations."

The panel said that clusters of bomblets loaded with GB, a liquid nerve gas, should be disassembled and neutralized chemically by acid or alkaline hydrolysis. It said that under the Army's original plans there was a "remote possibility" that a "catastrophic explosion" could be caused by a sniper's bullet or a railroad or ship collision. The Pentagon, on 27 June, indicated it would carry out this recommendation.

The panel also said that liquid mustard agent, which is currently stored in bulk containers, should be burned in government establishments where local air pollution would not be a serious problem. The panel said that while there was virtually no danger of a catastrophic accident with mustard, it was concerned about possible adverse effects on the oceanic ecosphere when the mustard eventually leaked out of its containers. The Pentagon also agreed to comply with this recommendation.

The panel said the other three materials involved—namely, GB nerve gas rockets imbedded in concrete and steel "coffins," steel containers contaminated by toxic chemicals, and canisters of CS riot control agent imbedded in drums filled with concrete—could be dumped at sea without serious harm if no other suitable means of disposal can be found. However, the panel urged the Army to convene a group of technical and demolition experts to determine if it is feasible to demilitarize the nerve gas rockets, and the Army agreed to form such a group.

The Academy study, by implication, pointed to two glaring oversights on the part of the Army. It noted that while "various chemical warfare agents have been repeatedly disposed of in the oceans by the United States and other nations . . . we have no information regarding possible deleterious effects of these operations on the ecosphere of the seas." The panel also suggested that the Army should assume that all chemical weapons will require eventual disposal and should consequently build disposal facilities that will not require dumping at sea.—P.M.B.

* Other members included Frederick Bellinger, Georgia Tech; Kenneth P. DuBois, University of Chicago; Carl M. Lathrop, Esso Research and Engineering Co.; Stephen Lawroski, Argonne National Laboratory; Colin M. MacLeod, Commonwealth Fund; Matthew S. Meselson, Harvard; N. M. Newmark, University of Illinois; Donald W. Pritchard, Johns Hopkins; John H. Ryther, Woods Hole Oceanographic Institution; John C. Sheehan, M.I.T.; and James L. Whittenberger, Harvard School of Public Health. Staff director was Martin A. Paul.